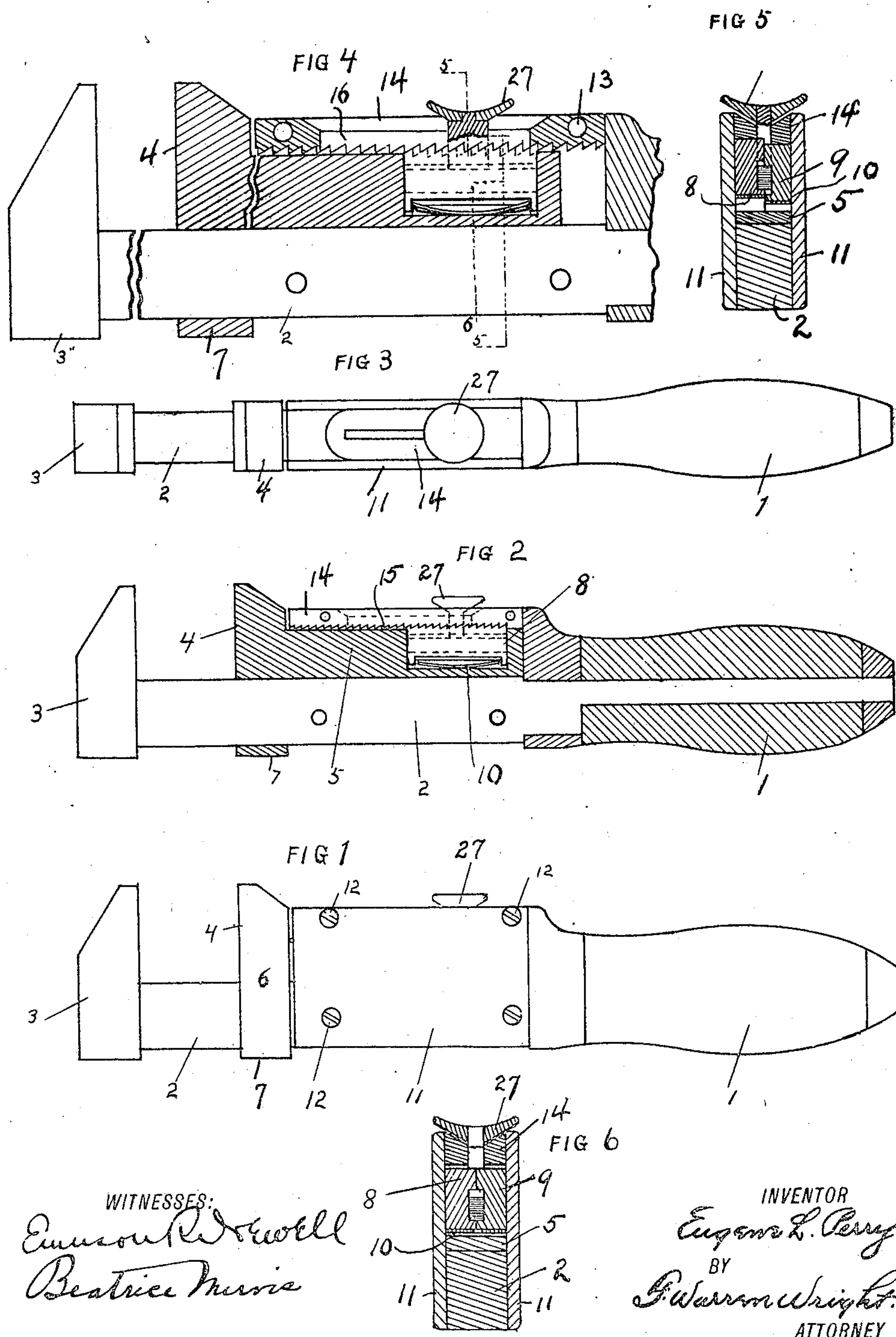


No. 838,578.

PATENTED DEC. 18, 1906.

E. L. PERRY.
INSTANTANEOUS WRENCH.
APPLICATION FILED APR. 25, 1906.

2 SHEETS—SHEET 1.

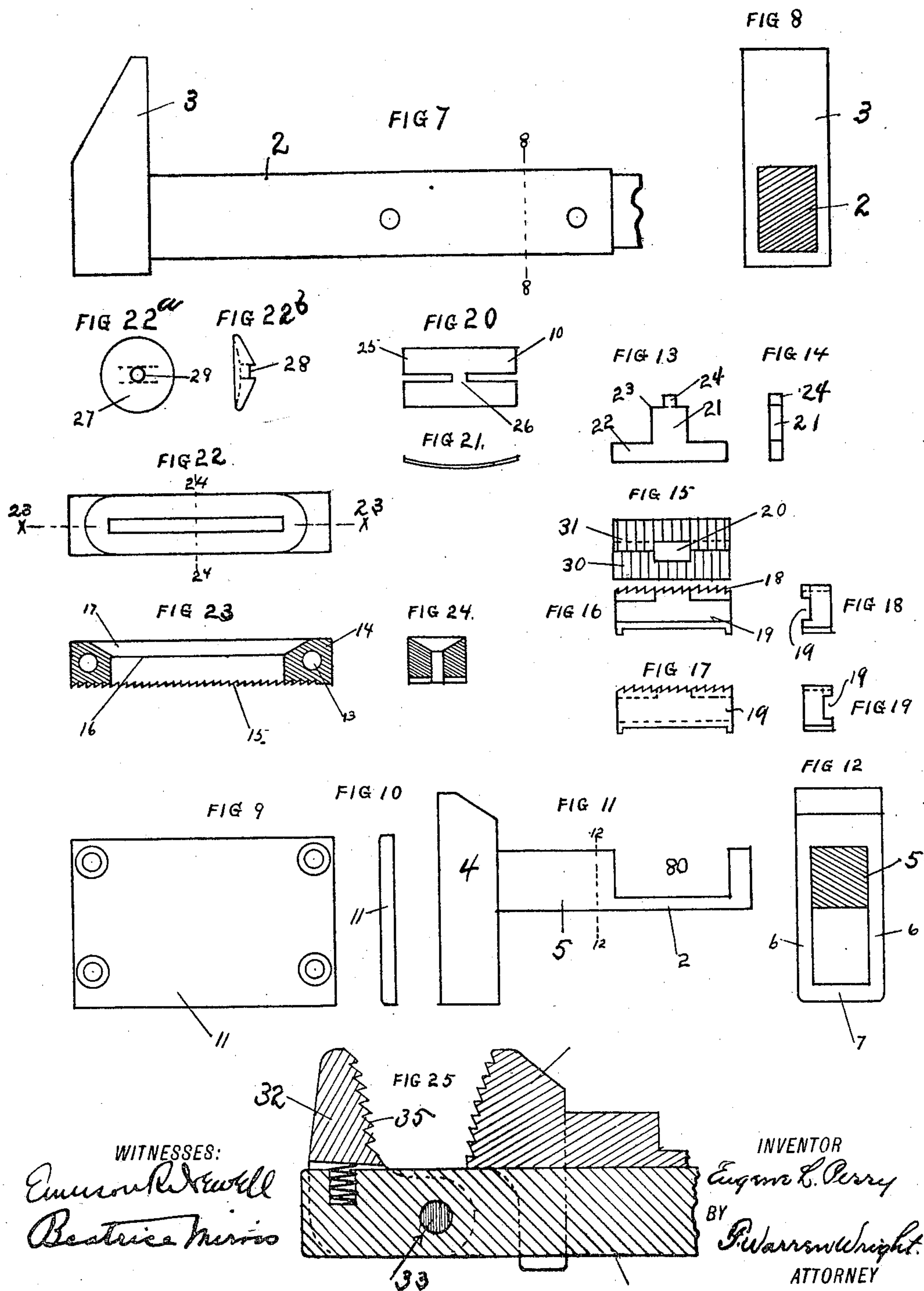


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2 SHEETS—SHEET 2.



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INSTANTANEOUS WRENCH.

No. 838,578.

Specification of Letters Patent.

Patented Dec. 18, 1906.

Application filed April 25, 1906. Serial No. 313,699.

To all whom it may concern:

Be it known that I, EUGENE L. PERRY, a citizen of the United States, residing at Brooklyn, New York, have invented certain new and useful Improvements in Instantaneous Wrenches, of which the following is a clear, full, and exact description.

The object of this invention is to provide a simple, cheap, efficient, strong, and relatively light monkey-wrench of the type known as "instantaneous" wrenches, in which the shifting and locking of the movable jaw are effected by means of a toothed rack and a rack dog or dogs. In this type of wrench much more rapid adjustment can be secured than in the ordinary Coe's wrench. As heretofore constructed wrenches of this type have not been strong nor free from liability of becoming loose.

According to my invention I am enabled to provide a wrench of this type which will have flat bearing-surfaces for the shank of the stationary jaw and also for the shank of the movable jaw. Preferably I provide a pocket in the upper surface in the shank of the movable jaw to hold the rack dog or dogs, while the rack itself is held on the outside of said movable shank and is preferably connected with a stationary shank by side plates. A plunger mechanism is also provided for depressing the dog or dogs that they may not engage the rack, so that the movable jaw may be freely slid to any desired position, while springs are provided to project the dogs and lock said movable jaw in position. I prefer to provide two dogs, one of said dogs having the summit of its teeth opposite the depths of the teeth on the other dog, so that in reality but one dog at a time will firmly grip the rack. The object of this arrangement is to get a fine adjustment for the movable jaw, at the same time maintaining a relatively coarse rack-bar and rack-dog teeth.

In the following description and in the accompanying drawings I have illustrated my preferred construction of instantaneous wrench, in which drawings—

Figure 1 is a side elevation of my improved wrench in wide-open position. Fig. 2 is a longitudinal section of the same with the stationary jaw and shank, rack, and rack-dog in side elevation. Fig. 3 is a plan of Fig. 1. Fig. 4 is a section, partly broken away,

with the stationary shank, rack-dog, and stationary jaw in side elevation, but with the slidable shank, rack, and plunger-button in section. Fig. 5 is a section on line 5 5, Fig. 4. Fig. 6 is a section on line 6 6, Fig. 4. Fig. 7 is a side elevation of the stationary jaw and shank, part of the shank being broken away. Fig. 8 is a section on line 8 8, Fig. 7. Fig. 9 and Fig. 10 are respectively a side elevation and end view of one of the side plates. Fig. 11 is a side elevation of a movable jaw and shank. Fig. 12 is a section on line 12 12, Fig. 11. Fig. 13 and Fig. 14, respectively are side and end elevations of the plunger-rod and cross-head. Fig. 15 is a plan of a pair of rack-dogs. Fig. 16 is an inner side elevation of one of the rack-dogs. Fig. 17 is a side elevation from the outside of a rack-dog. Figs. 18 and 19 are end elevations of the rack-dog of the preceding figures. Fig. 20 is a plan of the spring, while Fig. 21 is a side elevation of the same. Fig. 22 is a plan view of the rack-bar. Figs. 22^a and 22^b are plan and side elevation of the button. Fig. 23 is a section on line 23 23, Fig. 22. Fig. 24 is a section on line 24 24, Fig. 22; and Fig. 25 shows a modified form of wrench for gripping pipes.

As shown in the drawings, the wrench is composed of a handle 1, embracing a stationary shank 2, which carries the stationary head or jaw 3 at one end. The slidable jaw 4 has a shank 5, side plates 6 6, and end plate 7, surrounding and nicely fitting the stationary shank 2. The shank 2 has a pocket formed across its upper surface and of material depth, in which the rack-dogs 8 and 9 are to be located on top of a spring 10. To the stationary shank 2 I secure side plates 11 by screws 12, the upper screws 12 passing through holes 13 in the slotted rack-bar 14, provided with teeth 15 on its under surface, with a longitudinal central slot 16 and with a shaped-out well 17 in its upper surface. The rack-dogs 8 and 9 are formed with teeth 18 on their upper surface, with a transverse slot or groove 19 along their inner surface, and with an opening 20 in the top wall thereof for the passage of a plunger-shank 21, which shank carries a cross-head 22, flat shoulders 23, and a central stud 24. The cross-head 22 is preferably of less height than the channel or groove 19 in the dog, but of greater width than the channel, so as to en-

gage both dogs at once. The spring is preferably formed of two parts 25, joined together by a bridge 26. The plunger-button 27 is formed with a central opening 29 and a slot 28, which slot may be forced over the shoulders 23 of the plunger, while the opening 29 may fit tightly the stud 24 of the plunger. As will be seen upon reference to Fig. 15, the summits 30 of one rack-dog come opposite the depths 31 of the adjacent rack-dog for the purpose hereinbefore described.

As shown in Fig. 25, 32 is the head of a wrench which corresponds to the stationary jaw of the other figures, but is pivoted to its shank 33 and is formed with pipe-engaging teeth 35, while the movable jaw is of a construction of jaw 4 of the figures before described, except that it is curved and formed with a second set of pipe-engaging teeth.

In assembling the wrench of Figs. 1 to 24, inclusive, the movable shank will be slipped over the stationary shank and the handle then affixed. The side plates may then be put in position without the upper screws 12. The H-shaped spring 10 will then be dropped into the pocket 80 of the movable shank. The cross-head 22 is placed between a pair of jaws, with its shank projecting through the opening 20, and then the jaws and cross-head inserted on top of the H-shaped spring. The stationary rack-bar may now be put in position and the upper set of screws 12 inserted to hold the same in place. Then the plunger-button 27 may be placed over the stud and shoulders of the plunger-rod and forced into place by a blow or pressure. The wrench will then be ready for use in the following manner: When the hand of the operator grasps the handle without pressing upon the plunger-button, each leaf of the H-shaped spring will tend to force its corresponding rack-dog upward, one of which will engage the teeth of the rack, and the other will occupy the position shown in dotted lines in Fig. 4. The movable jaw cannot then be forced back, for the dog on its substantially vertical surface will have engaged the substantially vertical surface of the rack-bar. As an actual fact, I form these substantially vertical surfaces about two degrees off the vertical in my preferred form, though I do not limit myself to any particular form or angle of teeth. Upon pressing the plunger down the loosely-fitting cross-head of the same will press the two dogs from the position of Fig. 5 to that of Fig. 6, where both will be disengaged from the rack, so that a to-and-fro motion of the thumb upon the plunger-button will instantly shift the movable jaw to the position desired. It will be obvious that but one hand is needed to adjust and use this wrench.

I claim as my invention—

1. A wrench having a jaw, a shank and handle element, a movable jaw slidable on said shank, a tailpiece for the movable jaw,

a stationary rack-casing secured to the shank-handle element, a pocket in said tailpiece, a spring-pressed rack-dog in said pocket, a plunger passing through said rack-casing and engaging the dog and a rack adapted to be grasped by the dog, said rack-casing comprising a pair of side plates secured to the shank with the aforesaid rack between their upper edges with its teeth projecting toward the shank.

2. A wrench having a jaw, a shank and handle element, a movable jaw slidable on said shank, a tailpiece for the movable jaw, a stationary rack-casing secured to the shank-handle element, a pocket in said tailpiece, a spring-pressed rack-dog in said pocket, a plunger passing through said rack-casing and engaging the dog, and a rack adapted to be grasped by the dog, a second rack-dog in the pocket having the summit of its teeth opposite the depth of the teeth of the other dog.

3. A wrench having a jaw, a shank and handle element, a movable jaw slidable on said shank, a tailpiece for the movable jaw, a stationary rack-casing secured to the shank-handle element, a pocket in said tailpiece, a spring-pressed rack-dog in said pocket, a plunger passing through said rack-casing and engaging the dog and a rack adapted to be grasped by the dog, a second rack-dog in said pocket, a plunger engaging recesses on the faces of the dogs, and a cross-head on the plunger fitting therein.

4. A wrench having a jaw, a shank and handle element, a movable jaw slidable on said shank, a tailpiece for the movable jaw, a stationary rack-casing secured to the shank-handle element, a pocket in said tailpiece, a spring-pressed rack-dog in said pocket, a plunger passing through said rack-casing and engaging the dog and a rack adapted to be grasped by the dog, a second rack-dog in said pocket, a spring having two separate leaves in a common plane and joined together one under each dog.

5. A wrench having a jaw, a shank and handle element, a movable jaw slidable on said shank, a tailpiece for the movable jaw, a stationary rack-casing secured to the shank-handle element, a pocket in said tailpiece, a spring-pressed rack-dog in said pocket, a plunger passing through said rack-casing and engaging the dog and a rack adapted to be grasped by the dog, a second rack-dog in said pocket, a spring having two separate leaves in a common plane and joined together one under each dog, recesses on the sides of the dogs and a cross-head on the plunger fitting the recesses.

6. A wrench having a jaw, a shank and handle element, a movable jaw slidable on said shank, a tailpiece for the movable jaw, a stationary rack-casing secured to the shank-handle element, a pocket in said tailpiece, a spring-pressed rack-dog in said pocket, a

plunger passing through said rack-casing and engaging the dog, and a rack adapted to be grasped by the dog, a second rack-dog in the pocket having the summit of its teeth opposite the depth of the teeth of the other dog, each dog having a central channel and an opening in its upper wall, a cross-head for the plunger loosely fitting within the channel, the plunger-rod passing through said opening.

7. A wrench having a jaw, a shank and handle element, a movable jaw slidable on said shank, a tailpiece for the movable jaw, a stationary rack-casing secured to the shank-handle element, a pocket in said tailpiece, a spring-pressed rack-dog in said pocket, a plunger passing through said rack-casing and engaging the dog and a rack adapted to be grasped by the dog, said plunger having a central pin and a flat shoulder, a plunger-button having a pole for the pin and a slot in its lower face for the shoulder.

8. A wrench having a jaw, a shank and handle element, a movable jaw slidable on said shank, a tailpiece for the movable jaw, a stationary rack-casing secured to the shank-handle element, a pocket in said tailpiece, a spring-pressed rack-dog in said pocket, a plunger passing through said rack-casing and engaging the dog and a rack adapted to be grasped by the dog, said rack having teeth on its inner face and a slot lengthwise thereof and in its center through which the plunger passes.

9. A wrench having a jaw, a shank and handle element, a movable jaw slidable on said shank, a tailpiece for the movable jaw, a stationary rack-casing secured to the shank-handle element, a pocket in said tailpiece, a spring-pressed rack-dog in said pocket, a plunger passing through said rack-casing and engaging the dog, and a rack adapted to be grasped by the dog, a second rack-dog in the pocket having the summit of its teeth opposite the depth of the teeth of the other dog, whereby but one dog at a time will firmly grasp the rack and a plunger adapted to depress both dogs at once.

10. A wrench having a stationary jaw, a shank and handle element immovably connected, a movable jaw slidable on said shank between handle and stationary jaw, a tailpiece for the movable jaw, a stationary rack-

casing secured to the shank-handle element, a pocket in said tailpiece, a spring-pressed rack-dog in said pocket, a plunger passing through said rack-casing and engaging the dog and a rack adapted to be grasped by the dog.

11. A wrench having a handle, a shank secured thereto, a stationary outer jaw on said shank, said shank having a plane upper surface, a movable jaw with a plane shank slidable on the first said surface between the handle and stationary jaw, a rack and a rack-dog between the two aforesaid shanks, said rack carried above the shank of the movable jaw.

12. A wrench having a handle, a shank secured thereto, a stationary outer jaw on said shank, said shank having a plane upper surface, a movable jaw with a plane shank slidable on the first said surface between the handle and stationary jaw, a rack and a rack-dog between the two aforesaid shanks, said rack carried above the shank of the movable jaw, and a pocket in the shank for the rack-dogs.

13. A wrench having a handle, a shank secured thereto, a stationary outer jaw on said shank, said shank having a plane upper surface, a movable jaw with a plane shank slidable on the first said surface between the handle and stationary jaw, a rack and a rack-dog between the two aforesaid shanks, a side plate secured to the handle-shank and carrying the rack at right angles to its upper end and above the movable shank.

14. A wrench having a handle, a shank secured thereto, a stationary outer jaw on said shank, said shank having a plane upper surface, a movable jaw with a plane shank slidable on the first said surface between the handle and stationary jaw, a rack and a rack-dog between the two aforesaid shanks, a side plate secured to the handle-shank and carrying the rack at right angles to its upper end and above the movable shank, and a pocket in the movable shank for the rack-dogs.

Signed at New York city this 23d day of April, 1906.

EUGENE L. PERRY.

Witnesses:

F. WARREN WRIGHT,
CAROLINE G. WRIGHT.